

REMARKS

Claim Status

By this amendment, claim 39 is amended and claim 57 is cancelled. Claims 38-56 and 58-66 are pending. The amendments to the claim 39 is in response to the Claim Suggestions section of the Office Action. No additional amendments have been made.

Claim Suggestions

Claim 39 has been amended to delete “is a single piece packing that,” since claim 38 already recites that the packing is a single piece, as pointed out in the Office Action. Claim 53 has not been amended, since claim 53 does not add a “single piece” element.

Double Patenting

The Office Action indicates “that the claims are very close to double patenting with applicant’s child case 11/247,353.” Applicant respectfully submits that no response to the “Double Patenting” section is required, since a double patenting rejection has not been stated.

Claim Rejections - 35 USC § 112

Claim 57 has been cancelled.

Claim Rejections - 35 USC § 102 and 103

The Office Action rejected claims 38-66 as being unpatentable over U.S. Patent No. 5,326,074 to Spock Jr. in view of U.S. Patent No. 5,730,420 to Tow. The Office Action rejected claims 38-60 and 62-66 as being unpatentable over Tow in view of U.S. Patent No. 3,214,135 to Hartmann. The Office Action rejected claims 64 and 65 as being anticipated by Hartmann.

The Office Action has not established a *prima facie* case of obviousness of claim 38 based on the Spock Jr. and Tow references, because claim 38 includes features that are not shown or suggested by the Spock Jr. or Tow references and because the Office Action fails to establish that the asserted motivation to combine the Spock Jr. and Tow references is recognized in the prior art.

Claim 38 recites a lower trunnion that extends axially past a lower end of the single piece packing. The Office Action asserts that, in the Spock Jr. valve, the areas of the plug valve element 26 that are above and below the passage 18 are trunnions. The Office Action does not provide any indication that such areas of a plug valve element are recognized by those having skill in the art as trunnions. Applicant respectfully submits that the areas of the plug valve element 26 that are above and below the passage 18 are not trunnions, but are simply part of the plug valve element 26. One having ordinary skill in the art would not consider such areas of the plug valve element to be trunnions. In Tow, the lower trunnion of the valve element does not extend past the end of the packing. *Prima facie* obviousness of claim 38 has not been established, since Tow does not disclose a lower trunnion that extends past a lower end of a packing and Spock Jr. does not disclose a trunnion at all.

To establish a *prima facie* case of obviousness, there must be some reason, suggestion, or motivation, found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. MPEP § 2143, *In Re Oetiker*, 977 (Fed. Cir. 1993). *Prima facie* obviousness can only be established when motivation to combine is found explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. MPEP § 2143.01. “The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” MPEP § 2143.01, *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 61 USPQ2d 1430, 1433-1434 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references).

The Office Action asserts that the motivation to combine the Spock Jr. and the Tow references is “in order to make the valve smaller as this would cut the corners of the plug valve.”

Office Action dated 12/4/2006, p.4. However, the Office Action has failed to identify any teaching in the prior art that making the plug valve of Spock Jr. ball shaped or cutting corners would make the overall valve smaller. The Office Action has not relied upon any objective evidence or made any factual findings in making its conclusory assertion of motivation. *Prima facie* obviousness has not been established.

The Office Action has not established a *prima facie* case of obviousness of claim 38 based on the Tow and Hartmann references, because the Office Action fails to establish that the asserted motivation to combine the Tow and Hartmann references is recognized in the prior art.

The Office Action asserts that the motivation to combine the Tow and Hartmann references is “in order to insure that the lower trunnion does not slip out of the packing.” Office Action dated 12/4/2006, p.6. However, there is no indication that it is recognized in the prior art that, in the Tow valve, the lower trunnion could ever slip out of the packing. To the contrary, Tow discloses that molding the packing around the valve element tightly surrounds the valve element. Tow col. 2, ll. 34-43; col.4, ll.14-31. The Office Action has not relied upon any objective evidence or made any factual findings in making its conclusory assertion of motivation. *Prima facie* obviousness has not been established. Claim 38 is in condition for allowance.

Claims 39 and 40 depend from claim 38 and are allowable for at least the reasons claim 38 is allowable.

Claim 41 depends from claim 38 and further recites that said packing has a generally cylindrical outer surface defined by a height H and an outer diameter D4, said packing having a ratio H/D4 of about 0.75 to about 0.85. The Office Action asserts that the packing of Tow has a ratio of H/D4 of about 0.8 “*as measured by the drawings.*”(emphasis added) . Office Action dated 12/4/2006, p.5,6. Applicant respectfully points out that “proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale.” MPEP 2125. There is no indication that the drawings of the Tow reference are to scale. As such, the Office Action cannot rely on the drawings of Tow for a teaching of the claimed proportions.

Applicant also respectfully points out that there is no suggestion in the applied references that the ratio of packing height to packing diameter has any significance. As such, absent any

specific dimensions, one having ordinary skill in the art would not build a valve with a packing that has the claimed height to diameter ratio or even appreciate the value of a packing with the claimed height to diameter ratio. Only applicant teaches the claimed height to diameter ratio.

Applicant also respectfully points out that even if it were appropriate to measure the drawings of the Tow patent, such a measurement would not meet the claimed $H/D4$ ratio. The height H of the packing is greater than the diameter $D4$ of the packing on Applicant's copy of the Tow patent. As such, the measured ratio $H/D4$ on Applicant's copy of the patent is greater than 1 and therefore would not meet the claimed $H/D4$ ratio of about 0.75 to about 0.85, even if such a measurement were permissible.

Claim 42 depends on claim 41 and is allowable for at least the reasons claim 41 is allowable.

Claim 43 depends from claim 38 and further recites that the ball has an outer diameter $D1$ and at least one of said trunnions having an outer diameter $D3$; wherein said valve element has a ratio $D3/D1$ of about 0.7 to about 0.9. The Office Action asserts that "Tow discloses a ball valve having a ratio of $D3/D1$ of 0.8 *as measured by the drawings* using the lower trunnion. (emphasis added) Office Action dated 12/4/2006, p.4. The Office Action cannot rely on the drawings of Tow for a teaching of the claimed proportions as explained above. Applicant also respectfully points out that even if it were appropriate to measure the drawings of the Tow patent, such a measurement would not meet the claimed $D3/D1$ ratio. A measurement of Applicant's copy of the Tow patent showed a $D3/D1$ ratio of about 0.6. This illustrates why such "measurements" do not provide a valid basis for claim rejections and are evidence that the rejection is based on hindsight.

Claim 44 depends from claim 43 and is allowable for at least the reasons that claim 43 are allowable.

Claim 45 depends from claim 39 and is allowable for at least the reasons claims 39, 41 and 43 are allowable.

Claim 46 depends from claim 45 and is allowable for at least the reasons claim 45 is allowable.

Claim 47-56 and 58 depend from claim 38 and are allowable for at least the reasons claim 38 is allowable.

Claim 59 depends from claim 38 and further recites that valve cavity comprises a reduced diameter bore that receives said lower trunnion and prevents packing material from creeping below said lower trunnion. The Office Action has not addressed the “prevents packing material from creeping below said lower trunnion” element of claim 59. Therefore, the Office Action has not established *prima facie* obviousness of claim 59. Claim 59 is in condition for allowance.

Claim 60 depends from claim 38 and further recites that the packing is live loaded. Claim 60 is allowable for the reasons claim 38 is allowable and is also allowable, because the Tow, Spock Jr. and Hartmann references do not disclose or suggest a live loaded packing. In Tow, the packing is secured in the valve body with a nut and a washer and the packing is not live loaded. In Spock Jr. the cover 28 positively engages the body 12 and the packing is not live loaded. In Hartmann the half shells 15, 16 are secured between the cover 11 and the housing and the half shells 15, 16 are not live loaded. Claim 60 is in condition for allowance.

Claims 61 and 62 depend from claim 38 and is allowable for at least the reasons claim 38 is allowable.

Claims 63, 64 and 66 are independent claims that also recite that a lower trunnion extends axially past a lower end of the packing. Claims 63 and 64 are further allowable for at least the reasons claim 38 is allowable.

Independent claim 65 is patentable over the Hartmann, Tow and Spock Jr., because claim 65 recites features that are not disclosed or suggested by Hartmann, Tow or Spock Jr. For example, claim 65 recites load members that apply a load to the packing over a range of temperatures while permitting the valve element to axially shift to compensate for temperature

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effects on the packing. No such load members are disclosed or suggested by Hartmann, Tow or Spock Jr. Claim 65 is in condition for allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ken Smith".

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